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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,772	11/17/2003	Albert A. Zofchak	A17-060	2422
7590 Henry D. Coleman COLEMAN SUDOL SAPONE, P.C. 714 Colorado Avenue Bridgeport, CT 06605-1601			EXAMINER QAZI, SABIHA NAIM	
			ART UNIT	PAPER NUMBER
			1612	
			MAIL DATE	DELIVERY MODE
			03/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/714,772

Applicant(s)

ZOFCHAK ET AL.

Examiner

Sabiha Qazi

Art Unit

1612

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 12-18, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-18, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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Final Office Action

Claims 1-9, 12-18, 21 and 22 are pending. No claim is allowed at this time. Amendments are entered.

Summary of this Office Action dated March 15, 2008

1. Copending Applications
2. Specification
3. 35 USC § 103(a) Rejection
4. Response to Remarks
5. Conclusion
6. Communication

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Copending Applications

Applicants must bring to the attention of the examiner, or other Office official involved with the examination of a particular application, information within their knowledge as to other copending United States applications, which are "material to patentability" of the application in question. MPEP 2001.06(b). See *Dayco Products Inc. v. Total Containment Inc.*, 66 USPQ2d 1801 (CA FC 2003).

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9 and 12-18, 21 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over EMMONS et al.¹; Jones, Charles E². These references teach urethane derivatives useful for personal care products which embrace presently claimed invention.

EMMONS teaches low molecular weight thickeners, characterized by hydrolytic stability, versatility and efficiency, and to a wide variety of aqueous systems containing the thickeners.

The thickeners provide a combination of properties not found in any one class of known thickeners. For example, they are **nonionic** and in many cases are highly efficient **viscosity improvers** although having a relatively low molecular weight. They are stable to water and alcohol and are not sensitive to biodegradation. They are versatile in that not only do they thicken virtually unlimited types of aqueous systems, but they also impart many of the auxiliary properties described above. Thus, as additives to textile binder compositions, they actually soften rather than harden the fabric. The reference further teaches that **urethane polymers having at least three low molecular weight hydrophobic groups at least two of which are terminal (external) hydrophobic groups**. Many of the polymers also contain one or more internal hydrophobic groups. The hydrophobic groups together contain a total of at least 20 carbon atoms and are linked through hydrophilic (water soluble) groups containing polyether segments of at least about 1,500, preferably at least about 3,000, molecular weight each so that the polymers readily solubilize in water, either by self-solubilization or through interaction with a known solubilizing agent such as a water miscible alcohol or surfactant. The

¹ US Patent 4,079,028

molecular weight of the polyurethanes is of the order of about 10,000 to 200,000.

The hydrophobic groups of the polyurethanes occur in the residues of reactants (b) and (c) and may also occur in the residue of reactant (d) if present. The terminal (external) hydrophobes are the residues of the monofunctional active hydrogen compounds, **organic monoisocyanates, or combinations of the residues of such compounds. The polymers may be substituted for known thickeners in any aqueous system in which thickeners are normally utilized and therefore the fields of use of the thickeners of the invention** include a host of industrial, household, medical, **personal care** and agricultural compositions. The thickening in such compositions is often also accompanied by other improvements, such as leveling, flow, stabilization, and suspension; high and low shear viscosity control, and binding properties. See the entire document especially abstract, and summary of the invention, Example 280 (drawn to cosmetics) and example 281 drawn to useful protein hair conditioner.

JONES teaches a method of thickening a hair dye composition comprising at least one polyethoxylated urethane. See the entire document especially [0016], [0019][0021, [0023].

The composition has improved thickening and shear thinning properties. The resistance of hair dye composition to drip or run once applied to the hair is enabled by viscosity at low shear rate. The ease of hair dye composition application to air is effected by viscosity at high shear rate after application by thickening due to interaction of hydrophobic modified nonionic polymer with itself. The hair dye include a rheology modifying system

² EP 0875 237 B1

containing at least one **hydrophobically modified nonionic polymer (HNP) and at least one associative agent**. The associative agent when combined with the hydrophobically modified nonionic polymer in the hair dye composition provides a thicker hair dye composition than what the hydrophobically modified nonionic polymer would provide without the associative agent in the hair dye composition. The associative agent when combined with the hydrophobically modified nonionic polymer in the hair dye composition also enhances the shear thinning properties of the hair dye composition in comparison to using the hydrophobically modified nonionic polymer without the associative agent.

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These improvements in the rheological properties of the hair dye composition are related to the following performance benefits. First, the resistance of the hair dye composition to drip or run once applied to the hair is affected by the hair dye composition's viscosity at low shear rates. The higher the viscosity at a low shear rate, the greater the resistance of the composition to drip or run. Second, the ease in which the hair dye composition is applied to the hair is effected by the hair dye composition's viscosity at high shear rates. The lower the viscosity at a high shear rate, the easier the hair dye composition will be to apply.

The hydrophobically modified nonionic polymer (HNP) preferably thickens by association, meaning that the HNP interacts or associates with it and other components in hair dye compositions to provide thickening. The hair dye composition, as applied to the hair, preferably contains at least 0.1 weight percent, preferably from 0.1 weight percent to

15 weight percent, and more preferably from 0.2 weight percent to 5 weight percent HNP, based on the total weight of the hair dye composition applied to the hair and based on the HNP being 100 weight percent solid polymer.

The HNP contains at least one hydrophobic group. The hydrophobic group is any chemical group that promotes water insolubility and includes, for example, alkyl, or aralkyl groups containing from about 4 to about 30 carbon atoms. Hydrophobic groups also include, for example, the hydrocarbon residues of hydroxyl, amino **or isocyanate** reactants, or any portion or segment of the polymeric reaction product that contributes to water insolubility. In addition, the HNP is nonionic which means it has no charge when dissolved or dispersed in aqueous solutions. Preferably, the HNP is water soluble or water swellable. Suitable **HNPs include for example polyethoxylated urethane**, or hydrophobically modified naturally derived polyols such as a hydrophobically modified cellulose, or hydrophobically modified starch, or combinations thereof. **The most preferred HNP is a polyethoxylated urethane.**

The hydrophobically modified cellulose is a cellulose containing derivative which has been modified with at least one hydrophobic group. The hydrophobic groups are typically introduced by well known methods to functionalize some portion of the free hydroxyl groups in the cellulose polymer. Preferably, the hydrophobic group is a C.sub.4 to C.sub.20 alkyl or aralkyl group. Preferred hydrophobically modified cellulose is a cetyl hydroxyethylcellulose.

Instant claims differ from the reference in claiming a method of use of specific urethanes for personal care products wherein prior art teaches other uses including the use in personal care products.

It would have been obvious to one skilled in the art to prepare additional beneficial compositions to prepare personal care products with increased viscosity because prior art teaches the same. One skilled in the art would be motivated to use urethane derivatives in order to adjust or increase the viscosity of any personal care products. Applicants in the disclosure have no showing of any criticality or any new use. In view of the teachings of the prior art present invention is considered obvious.

In the light of the forgoing discussion, the Examiner's ultimate legal conclusion is that the subject matter defined by the instant claims would have been obvious within the meaning of 35 U.S.C. 103(a).

Response to Remarks

Arguments were fully considered but were not found persuasive therefore In order to advance the prosecution. The argument is that the formation of the said urethane compounds however, claim 1 is drawn to a product and not the method of making. The reference teaches that HNP contains at least one hydrophobic group.

The hydrophobic group is any chemical group that promotes water insolubility and includes, for example, alkyl, or aralkyl groups containing from about 4 to about 30 carbon atoms. Hydrophobic groups also include, for example, the hydrocarbon residues

of hydroxyl, amino **or isocyanate** reactants, or any portion or segment of the polymeric reaction product that contributes to water insolubility. In addition, the HNP is nonionic which means it has no charge when dissolved or dispersed in aqueous solutions.

Preferably, the HNP is water soluble or water swellable.

Suitable **HNPs include for example polyethoxylated urethane**, or hydrophobically modified naturally derived polyols such as a hydrophobically modified cellulose, or hydrophobically modified starch, or combinations thereof. **The most preferred HNP is a polyethoxylated urethane.**

The reference teaches that the organic polyisocyanate, reactant (b), may contain any number of carbon atoms effective to provide the required degree of hydrophobic character. Generally, about 4 to 30 carbon atoms are sufficient, the selection depending on the proportion of the other hydrophobic groups and hydrophilic polyether in the product. Suitable organic polyisocyanates include for example **di- and triisocyanates, isocyanate-terminated adducts of such polyhydric alcohols and organic di- or triisocyanates, as well as isocyanate-terminated prepolymers of polyalkylene ether glycols and organic di- or triisocyanates. While it is preferred that reactant (b) be an organic polyisocyanate, reactants containing one or more functional groups other than isocyanate are also suitable.**

Reactant (c), a monofunctional hydrophobic organic compound is a compound capable of reacting with one or both terminal functional groups of the reaction product of reactants (a) and (b). Reactant (c) includes both a monofunctional active hydrogen compound and an **organic monoisocyanate.**

The term "monofunctional active hydrogen compound" means an organic compound having only one group which is reactive with isocyanate, such group containing an active hydrogen atom, where any other functional groups, if present, being substantially unreactive to isocyanate.

Such compounds include monohydroxy compounds such as alcohols, alcohol ethers, or alcohol polyethers; and monoamines; as well as polyfunctional compounds providing the compound is only monofunctional to isocyanates. The most preferred monofunctional active hydrogen compounds are C.sub.6 -C.sub.25 straight or branched alcohols, alcohol ethers, or alcohol polyethers.

In addition to a monofunctional active hydrogen compound, reactant (c) may be a monoisocyanate. The monoisocyanate may include C.sub.6 to C .sub.18 straight chain, branched chain, and cyclic isocyanates such as for example, butyl isocyanate, octyl isocyanate, dodecyl isocyanate, octadecyl isocyanate, and cyclohexyl isocyanate. These isocyanates may be used singly or in mixtures of two or more thereof.

Applicant is requested to explain clearly the real difference, any criticality and/or unexpected results.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sabiha Qazi whose telephone number is (571) 272-0622. The examiner can normally be reached on any business day except Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krass Frederick can be reached on (571) 272-0580. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sabiha Qazi/

Primary Examiner, Art Unit 1612